



**HARFORD COUNTY
MUNICIPAL SEPARATE STORM
SEWER SYSTEM (MS4)
AUDIT**

**HARFORD COUNTY
DEPARTMENT OF PUBLIC WORKS
220 SOUTH MAIN STREET
BEL AIR, MD 21014**

**FINAL
MARCH 2010**

**Office of Compliance and Enforcement
U.S. Environmental Protection Agency
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Washington, D.C. 20460**

**U.S. Environmental Protection Agency, Region III
Water Protection Division
Office of NPDES Enforcement (3WP42)
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EXECUTIVE SUMMARY

Municipal Separate Storm Sewer System (MS4) Audit Report Harford County, Maryland

On May 20-21, 2009, a compliance inspection team comprising staff from EPA Region 3, Maryland Department of the Environment (MDE), EPA's contractor, Eastern Research Group, Inc. (ERG), and ERG's subcontractor, PG Environmental, LLC, inspected the Harford County, Maryland municipal separate storm sewer system (MS4) program. Discharges from the County's MS4 are regulated by MDE National Pollution Discharge Elimination System (NPDES) Permit Number MD0068268, effective November 1, 2004. The purpose of this inspection was to evaluate compliance with the County's Permit MD0068268, which is included in Attachment 1. The inspection focused specifically on the following sections of the Permit in relation to the County's MS4 program: (1) Stormwater Management; (2) Illicit Discharge Detection and Elimination; (3) County Property Management; (4) Public Education; (5) Assessment of Controls; and (6) Watershed Assessment, Planning, and Restoration.

EPA's compliance inspection team made several observations concerning the County's MS4 program related to the specific permit requirements evaluated. Table 1 summarizes the Permit requirements and the observations noted by the inspection team.

Table 1. Observations Identified During the Harford County Inspection (5/20/09 – 5/21/09)

Maryland Permit Number MD0068268 Requirement	Observations
III.E.1 – Stormwater Management	Observation 1. Harford County does not document and track stormwater plan review comments and procedures Observation 2. Harford County inspectors did not verify pond storage capacity during inspections Observation 3. Harford County does not require sufficient sequencing notes on design drawings Observation 4. Harford County does not evaluate the transition between active-construction BMPs and post-construction BMPs
III.E.3 – Illicit Discharge Detection and Elimination	Observation 5. Harford County's program does not fully address illicit discharges, illegal dumping and spills Observation 6. Harford County did not develop a standard operating procedure for documenting, reporting, tracking, and conducting adequate follow-up of potential illicit discharges or other pollutant sources Observation 7. Harford County did not focus on hotspots in commercial and industrial survey location selection Observation 8. Harford County did not provide training or direction to county personnel and field staff for detecting and eliminating illicit discharges and improper disposal
III.E.4 – County Property Management	Observation 9. Harford County did not track and obtain NPDES industrial stormwater permit coverage Observation 10. Harford County did not develop and implement pollution prevention plans Observation 11. Harford County did not provide oversight of County property requiring NPDES permit coverage

Table 1. Observations Identified During the Harford County Inspection (5/20/09 – 5/21/09)

Maryland Permit Number MD0068268 Requirement	Observations
III.E.6 – Public Education	Observation 12. Harford County does not evaluate the effectiveness of its program in reaching the design community with outreach efforts Observation 13. Harford County does not provide outreach and education regarding illicit discharge detection and elimination
III.H – Assessment of Controls	No inconsistencies noted with this portion of the Permit
III.G – Watershed Assessment, Planning, and Restoration	Observation 14. Harford County is not restoring or treating 20 percent of the County's impervious area

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I. INTRODUCTION

On May 20-21, 2009, a compliance inspection team comprising staff from EPA Region 3, Maryland Department of Environment (MDE), EPA's contractor, Eastern Research Group, Inc. (ERG), and ERG's subcontractor, PG Environmental, LLC, inspected the Harford County, Maryland (hereafter, the County) municipal separate storm sewer system (MS4) program. The purpose of this inspection was to evaluate compliance with the County's National Pollutant Discharge Elimination System (NPDES) Permit Number MD0068268 (hereafter, the Permit), which is included in Attachment 1. The following personnel participated in this inspection:

Harford County Department of Public Works¹: Mr. Hudson Myers III, Deputy Director, Department of Public Works (DPW)

Ms. Christine Buckley, Chief, DPW, Bureau of Water Resources
Ms. Betsy Weisengoff, DPW, Bureau of Water Resources
Ms. Christy Joyce, DPW, Bureau of Water Resources
Mr. R. Bruce Appell, DPW, Bureau of Water Resources
Ms. Renee Baumgardner, DPW, Bureau of Water Resources
Ms. Doborah V. Lewis, DPW, Bureau of Water Resources
Ms. Michele Dobson, DPW, Bureau of Water Resources
Ms. Janey Crane, DPW, Bureau of Water Resources

EPA Representatives: Mr. Charles Schadel, EPA Region 3
Mr. Mark Zolandz, EPA Region 3

Maryland Department of the Environment Representative: Mr. Richard Trickett, Water Management Administration

EPA Contractors: Ms. Lisa Biddle, ERG
Mr. Mark Briggs, ERG
Mr. Max Kuker, PG Environmental, LLC

The inspection focused specifically on the following sections of the Permit in relation to the County's MS4 program: (1) Stormwater Management; (2) Illicit Discharge Detection and Elimination; (3) County Property Management; (4) Public Education; (5) Assessment of Controls; and (6) Watershed Assessment, Planning, and Restoration. During the inspection (office interviews and field visits), other sections of the Permit were briefly reviewed but were not completely evaluated.

Section II of this report presents background information on Harford County's MS4 program. Section III presents information obtained during the inspection related to the specific permit requirements evaluated, and Section IV presents additional information obtained during the inspection.

II. HARFORD COUNTY BACKGROUND

Harford County is located in the northeastern part of Maryland and encompasses approximately 369 square miles of land. According to the U.S. Census Bureau, Harford County had an estimated population of 240,351 in 2008. The County consists of extensive rural and agricultural areas; however the southern portion of the County is rapidly becoming urbanized. The City of Aberdeen, City of Havre de Grace, and Town of Bel Air are the only separate incorporated municipalities within Harford County; the County does not have authority over the storm drain systems in these localities.

¹ County organizational charts and a copy of sign-sheets containing the names of all county participants in the inspection are included as Attachments 2 and 3.

Harford County's stream networks fall in four major watersheds: the Lower Susquehanna River Sub-basin, the Upper Chesapeake Bay, the Little Gunpowder Falls, and the Bush River Basin. Hydrologically, approximately 40 percent of the County drains easterly to the Susquehanna River, 10 percent southwesterly to the Gunpowder River, 30 percent southeasterly to the Bush River, and the remaining 20 percent directly to the Chesapeake Bay. All of Harford county's watersheds were listed as impacted by nonpoint source pollution in MDE's 1989 *Nonpoint source Assessment Report*.

Harford County's MS4 program is administered primarily by the Department of Public Works (DPW) through two of the four DPW divisions:

- Division of Highways and Water Resources; and
- Division of Construction Management.

During the inspection, County personnel provided organization charts identifying the responsibilities of each division and their bureaus (see Attachment 3).

III. INFORMATION OBTAINED DURING THE INSPECTION REGARDING PERMIT REQUIREMENTS

The EPA inspection team obtained information to evaluate Harford County's compliance with the requirements of the Permit, under which the County's MS4 system is covered. The Permit, included in Attachment 1, has an effective date of 1 November 2004 and an expiration date of 1 November 2009. The EPA inspection team evaluated six permit components; observations regarding the County's implementation of each permit component are presented in the following six subsections. Attachment 4, the Exhibit Log, contains all referenced exhibits, and Attachment 5, the Photograph Log, contains all referenced photographs (additional photographs are available in the inspection record).

A. Requirement III.E.1 – Stormwater Management

Part III.E.1 of the Permit addresses requirements for the post-construction stormwater management program. Harford County's Stormwater Management program is implemented by DPW; the program components related to this section of the permit are discussed below.

1. Design Requirements and Review

Part III.E.1.b of the Permit requires the County to "Implement the stormwater management design policies, principles, methods, and practices found in the *2000 Maryland Stormwater Design Manual*." The program is administered according to Chapter 214, Article II of the Harford County Code, *Stormwater Quantity and Quality Management* (2002); Exhibit 1 includes a copy of Article II. The Code requires that post construction stormwater management be provided for all non-agricultural projects that disturb more than 5,000 square feet; exceptions to this requirement are described further below under Waivers, "Fees in lieu of" Program, and Variances. Stormwater quantity and quality design requirements in Harford County are consistent with the Maryland Stormwater Design Manual. During the inspection, the County indicated that stormwater management plans must be approved by May 4, 2010, and construction started within two years, in order to fall under the 2000 Maryland Design Manual. After May 4, 2010, stormwater management designs must be consistent with the revised Design Manual, which incorporates the Maryland Stormwater Management Act of 2007 with a greater focus on environmental site design and smaller, decentralized stormwater management strategies.

Designs are submitted to the Department of Planning and Zoning where they are logged into a database. The Bureau of Water Resources (Water Resources), within the Division of Highways and Water

Resources, reviews the design drawings for stormwater management. All design reviews conducted by Water Resources are performed by the lead reviewer and one junior staff member.

Three sets of design drawings are reviewed by Water Resources before a project design is considered complete. Preliminary drawings are reviewed for stormwater management planning and siting considerations and to identify outfalls that may be a concern. When more developed construction drawings are submitted, Water Resources reviews drainage hydrology and hydraulic calculations as well as maintenance schedules for post construction stormwater management practices. The lead Water Resources design reviewer meets with the design engineer to go over his comments when they are returned for revision; he indicated that this occurs approximately one-third of the time. The third set of design submittals that are reviewed by Water Resources is the as-built drawings. When as-built drawings are approved by Water Resources, the post construction stormwater management practice, or best management practice (BMP), is entered in the County's BMP database and a form is completed and submitted to the post construction inspection team. As-built drawings must be approved by Water Resources before an as-built field inspection will be initiated by the County (post construction inspections are discussed in the next section).

There are approximately 300 BMPs in Harford County's current inventory, Table 1 summarizes data from Harford County's 2007 database of BMPs indicating the count of each BMP type in the County's inventory for calendar years 2005, 2006, and 2007.

**Table 1. Summary of Stormwater Implementation Information for the Previous Three Years
(Provided in 2007 Annual Report Database)**

BMP	2005	2006	2007
Pond	23	28	31
Wetland	3	1	9
Infiltration	6	4	1
Filter	7	14	22
Open Channel	4	0	0
Other	10	2	10
Non-structural	213	154	62
Channel protection	32	19	19
10-year management	45	37	46

Each set of drawings submitted to Planning and Zoning is logged into a database and Water Resources receives a target review and response date, set for 30 working days after receipt. The lead Water Resources design reviewer indicated that they typically review 30 plans per month and this rate allows them to review at least 90 percent of the drawings submitted for review within the 30 working day window.

There are no standard operating procedures (SOPs) or checklists for Water Resources' design reviews. Review comments are provided in red on the hard copy drawings and no record of these comments or copy of the drawings are kept or tracked by Water Resources, though they are supposed to be included with the revised set of drawings when they are resubmitted to the County. Water Resources documents completed reviews by logging review dates in the database.

Stormwater Bonds

Most construction projects with stormwater components in Harford County are required to have a stormwater bond. The bond value is equal to the construction cost for the post construction BMP(s). The bond is partially released once the as-built drawings are approved and the as-built Inspection has been completed; however ten percent of the bond value is retained for one year to ensure proper maintenance is performed. After the facility is deemed satisfactory by the County from a second field inspection (completed one year after construction was completed), the entire bond is released. The County may use the bond to leverage against the property owner to ensure construction and maintenance is performed per design, this is illustrated in the example correspondence provided in Exhibit 2.

The County indicated that they do not currently bond small-scale BMPs, such as those that are emphasized in the revised Design Manual. These design components are reviewed during the design review process, but bonds are not required for them at this time. The County may need to consider a bonding approach for these practices in the future as the changes to the Design Manual are expected to transform design approaches toward many small BMPs rather than one or two large ponds, therefore rendering the small-scale practice critical to stormwater management compliance.

Maintenance Agreements

The majority of the BMPs in Harford County are privately owned; to insure these facilities are maintained properly, Harford County enters into a Maintenance Agreement with the owner. The Maintenance Agreement requires that the owner, and the owner's successors, "maintain in good condition and properly repair and restore all ground surfaces, walls, drains, dams, and structures, vegetation, erosion and sediment control measures, and other protective devices for the Stormwater Management Systems." It goes on to state that the owner shall perform "preventative maintenance on all completed Stormwater Management Systems to insure their proper functioning, including, but not limited to, the maintenance schedule for the Stormwater Management System or Systems as noted on the Stormwater Management Plan." The agreement also states that "The County shall inspect all Systems during the first year of operation and at least once every three (3) years thereafter." Also, if the owner fails to maintain the system within 30 days after proper written notice from the County, the Maintenance Agreement authorizes the County to perform the necessary maintenance or repairs and assess a lien against the property or property tax bill for the cost of the work and any applicable penalties. Exhibit 3A contains a blank Maintenance Agreement and Exhibit 3B contains a complete Maintenance Agreement for a private BMP facility.

The County also uses maintenance agreements for retrofit projects; these agreements may be the same as those for new construction on private property (repair and maintenance responsibilities lie with the property owner), or they may be set up for shared maintenance between the County and the property owner. An example Maintenance Agreement from a retrofit project is included as Exhibit 3C.

Harford County is responsible for maintenance of all County-owned BMPs. A summary of the County owned BMP inventory is provided as Exhibit 4.

Waivers

According to Section 214-28 of the Harford County Code for Stormwater Quantity and Quality Management (Exhibit 1), the County may issue stormwater management qualitative control and quantitative control waivers if various criteria are met. All waivers are decided on a case-by-case basis. Harford County tracks waivers in the plan review database and in Water Resource's GIS data; however there is no checklist or SOP documenting the review and approval process for waivers.

According to Section 28 of the County Code, waivers for stormwater management quantitative control may apply to projects where a watershed management plan has been developed or projects:

- That have direct discharges to tidally influenced receiving waters; or
- When the Department determines that circumstances exist that prevent the reasonable implementation of quantity control practices, provided one of the following requirements is satisfied:
 - Fees in lieu of (\$1.00 per square foot of impervious area);
 - Off-site BMP implementation for a drainage area comparable in size and percent of increased imperviousness to that of the project;
 - Watershed or stream restoration;
 - Retrofitting; or
 - Other practices approved by the Department.
- Where underground utilities are to be installed and the existing drainage patterns will not be changed and there is no increase in impervious area.

Stormwater management qualitative control waivers may apply to:

- In-fill development projects where the Department has determined stormwater management implementation is not feasible provided one of the following requirements is satisfied:
 - Fees in lieu of (\$1.00 per square foot of impervious area);
 - Off-site BMP implementation for a drainage area comparable in size and percent of increased imperviousness to that of the project;
 - Watershed or stream restoration;
 - Retrofitting; or
 - Other practices approved by the Department.
- Sites where the Department determines that circumstances exist that prevent the reasonable implementation of quality control practices, provided one of the following requirements is satisfied:
 - Fees in lieu of (\$1.00 per square foot of impervious area);
 - Off-site BMP implementation for a drainage area comparable in size and percent of increased imperviousness to that of the project;
 - Watershed or stream restoration;
 - Retrofitting; or
 - Other practices approved by the Department.
- Where underground utilities are to be installed and the existing drainage patterns will not be changed and there is no increase in impervious area.

“Fees In Lieu Of” Program

Harford County’s “fees in lieu of” program is not documented by an SOP, but was described by the County as a means by which construction of post construction stormwater management BMPs can be avoided when there are extenuating circumstances which make BMP construction infeasible. “Fees in lieu of” may be applied in place of water quality requirements, water quantity requirements, or both. The fee is \$1.00 per square foot of impervious surface; if the fee is applied in place of both quantity and quality

control then it is \$2.00 per square foot. The County explained that extenuating circumstances might be physical constraints, such as a high ground water table, insufficient space in highly developed areas, or in sufficient slope for conveyance to an outfall. According to the County Code, money collected as fees in lieu of “shall be used only to fund the investigation, design, construction, or maintenance of projects for quantitative or qualitative stormwater management or stream restoration.”

Variances

The County may grant variances from any requirement of stormwater management criteria if there are exceptional circumstances applicable to the site such that strict adherence will result in unnecessary hardship and not fulfill the intent of the article (Harford County Code, Chapter 214 – Section 30). The County indicated that variances are not tracked and there is no written SOP or checklist that is followed for granting variances. However the County did indicate that they grant very few variances, approximately three annually.

Table 2 summarizes stormwater design review and exemptions recorded by the County for calendar years 2005, 2006, and 2007.

**Table 2. Summary of Stormwater Programmatic Information for the Previous Three Years
(Provided in 2007 Annual Report Database)**

	2005	2006	2007
Number of new development projects received	47	83	74
Number of redevelopment projects received	8	10	7
Number of stormwater exemptions issued	1	4	3
Number of Stormwater Waivers Issued For 10-year management	15	16	10
Number of Stormwater Waivers Issued For 2-year management	0	0	0
Number of Stormwater Waivers Issued For channel protection	15	15	10
Number of Stormwater Waivers Issued For redevelopment	0	1	0
Number of Stormwater Waivers Issued For quality management	14	14	10
Number of fees-in-lieu approved	15	17	13
Amount of fees-in-lieu collected	\$196,717	\$252,952	\$165,365

Observation 1. Harford County does not document and track stormwater plan review comments and procedures

Although it is not a specific permit requirement, it was observed that Harford County does not document the plan review comments and procedures. The County did not have checklists and/or SOPs for issuing waivers and exemptions, “fee in lieu of”, and variances. Also, a tracking procedure was not in place that would retain a copy of all comments provided to the permittee’s engineers/designers with the County when plans are returned to engineers/designers, instead the current practice involves marking the comments directly on plans and sending them back to the designer.

2. Post-Construction Inspections

Part III.E.1.a of the Permit requires the County to “Conduct preventative maintenance inspections of all stormwater management facilities at least on a triennial basis.” It also requires that the County document the “facilities inspected, the number of maintenance inspections, the enforcement actions used to ensure compliance, and the maintenance inspection schedules” in the annual report. The County conducts the

triennial inspections in accordance with the permit requirements; this process is described in greater detail below. Table 3 summarizes the annual reporting related to these inspections.

Table 3. Summary of Inspection Data Presented in the 2006 and 2007 Annual Reports

	2006	2007
Number of facilities inspected for preventative maintenance	474	274
Number of inspected facilities found to be in compliance	204	107
Total number of maintenance inspections conducted ¹	941	372
Number of facilities that were as-built inspected	data not provided	69
Number of as-built sites found to be in accordance with the stormwater management plans	41	52
Total number of as-built inspections performed	87	121
Total number of field meetings conducted with contractors, management companies, and developers	129	109
Number of Homeowners' Association meetings to discuss maintenance requirements	6	6

¹ The 2006 Annual Report noted that there was an increase in the number of inspections performed due to the hiring of two temporary staff through the beginning of 2007. Turn over of temporary staff continues to be problematic for the County.

Two types of post construction stormwater management BMP inspections are performed by the County: as-built inspections and preventative maintenance inspections. As-built inspections are performed by the County before final construction approval and bond release (only 90 percent of the bond is released with initial construction approval, as described above). One year after final construction approval, a maintenance inspection is performed. Once the facility passes inspection, the remaining bond amount (10 percent) is released. At that point, the facility is put on a triennial preventative maintenance inspection schedule.

Stormwater inspections are performed within Water Resources by one lead inspector and one junior staff member, with the help of seasonal interns. The inventory of inspections that are due in calendar year 2009 (as of May 4, 2009) is included as Exhibit 5; there are 92 records in the inventory.

In addition to inspecting BMPs in the unincorporated Harford County, Water Resources also performs BMP inspections for the town of Bel Air, though Bel Air handles their own enforcement. The County has no inspection or enforcement responsibilities for the BMPs in the City of Aberdeen or the City of Havre de Grace.

The lead inspector performs all of the as-built inspections and many of the maintenance inspections though she is training the junior inspector to focus on maintenance inspections. The lead inspector indicated that she completes approximately 10 inspections per week and the junior staff member, with the help of interns, completes an average of 25 maintenance inspections per week. Inspections are performed according to a checklist ("Dam Inspection Checklist," Exhibit 6A) and a worksheet (Stormwater Management Worksheet, Exhibit 6B). As-built inspections also involve comparing the constructed BMPs with the as-built drawings. An example as-built package that would be used during an inspection is included as Exhibit 7.

Once an inspection is complete a report is generated and sent to the owner via e-mail. The report will include any required maintenance or repairs that were noted during the inspection and contact information for the County so that the owner can notify the County when maintenance or repairs have been

completed. Depending on severity of the maintenance or repair issue that is sited in the inspection, the County may require action within 30-days, or allow more time as long as progress is planned or being made, and reported to the County regularly.

The lead inspector explained that facilities that do not provide a status update, or proof that the required maintenance or repair has been done, are contacted by the County, first via e-mail or regular mail, then, if no response is received, via certified mail. Correspondence and progress updates are tracked in the inspections database. The lead inspector indicated that in some cases it may take up to a year for the needed maintenance or repair to be completed, but that the owners do typically cooperate in the end. When an owner does not cooperate, the case is taken to court and the County may claim the stormwater bond in order to fund the needed maintenance or repair activities. The County indicated that these steps are not documented in an SOP; however, the inspections database outlines the process. The County estimated that approximately 20 cases had to be taken to court over the past five years.

An example from the Stormwater Management Inspections Database was provided by the County (Exhibit 8). This example illustrates the County's procedure to return to the BMP after maintenance is requested of the owner to determine if it has been performed. This is planned for by the inspector by manually entering the "Next Inspection" date in the database. The inspectors typically set the date to return approximately one month after the initial inspection. Follow-on activities are scheduled as updates are received from the owner, or new field observations are made. The exhibit includes the form letter or report that is generated from the database and sent to the owner (this example is for the last inspection in the series, indicating repairs have been completed to the County's satisfaction). It should be noted that although re-inspection is not required more than every three years (per the Permit), the County typically schedules re-inspections for two years later.

3. Post-construction BMP Site Visits

On May 21, 2009, the inspection team witnessed four inspections performed by Harford County – two triennial inspections (one public and one private) and two as-built inspections (one public and one private); these are described below. All referenced photographs are contained in Attachment 5, Photograph Log.

Site: Winters Run Manor

Photographs 1 through 7 in Attachment 5 were taken at this private residential site, which consists of a large stormwater management pond for control and treatment of runoff from the residential development. The stormwater pond at Winters Run Manor is managed by the homeowners association. The inspection team witnessed a County triennial inspection of this facility. The stormwater management facility included a large wet pond with inlet and outlet structures with an influent water quality bay (Photographs 1 and 2). During the inspection the County inspector walked the entire pond perimeter, inspecting vegetation health and depth, inlet and outlet structures, fence integrity, and the overall appearance of the water and health of flora and fauna in the pond.

The following repair and maintenance needs were noted by the County inspector during this inspection:

- Slope failure on the uphill influent side of the water quality bay (Photograph 3);
- Erosion and sediment deposition in the water quality bay (Photograph 4);
- Obstruction of the pond outfall pipe with debris and sediment (Photograph 5);
- Possible seepage into the outfall structure through concrete walls (Photograph 6); and
- Overgrown vegetation in the path of the outfall to the receiving stream (Photograph 7).

The inspector indicated that due to the presence of tadpoles, and lack of mosquitoes and algae blooms, the pond was healthy and not suffering from over-fertilization. The inspector stated that she does not typically check sediment levels in the ponds during these inspections unless an obvious issue is observed.

Site: Detention Center

Photographs 8 through 10 in Attachment 5 were taken at this publicly owned site, which consists of a stormwater management wet pond for control and treatment of runoff from the Harford County-owned detention center (Photograph 8). The inspection team witnessed a County as-built inspection of this facility which was recently retrofitted to a wet pond from its previous use as a dry pond. The inspector noted that the vegetated bench was constructed in agreement with the as-built drawings and was in satisfactory condition. Tadpoles in the pond were noted as a sign of good water quality and proper fertilizer levels in the surrounding vegetation. The only major concern noted by the inspector was that the riser structure lacked proper bolts to attach the two precast concrete pieces together, as well as to attach the trash rack to the concrete (Photographs 9 and 10).

Site: Hickory II

Photographs 11 through 15 in Attachment 5 were taken at this publicly owned site, which consists of a stormwater management wet pond for control and treatment of runoff from the Harford County-owned maintenance, fueling, and materials storage facility (Photographs 11 and 12). This facility is described in greater detail in Section C. This facility had recently received a triennial inspection from Harford County's junior inspector. The junior inspector's report had noted no issues for follow-up. The lead inspector indicated that she will periodically visit those sites at which the junior inspector has performed triennial inspections to provide quality assurance and review of his work. During the inspection, the lead inspector noted several issues that the junior inspector failed to note in his report.

The following repair and maintenance needs were noted during this site visit:

- Vegetated banks of the pond need to be mowed (Photograph 13);
- The banks need to be weeded, the inspector noted Canadian Thistle (an invasive species) growing on the vegetated bank (Photographs 14 and 15);
- Sediment needs to be removed from the pond as a loss of storage was noted (noting the height of water on the cattails the inspector determined that the pond had silted in significantly).

The lead inspector indicated that she would work with the junior inspector to understand the issues he had overlooked at this facility so that they are noted in future inspections.

Observation 2. Harford County Inspectors did not verify pond storage capacity during inspections

The inspector indicated that the County inspectors do not typically check sediment depths in the ponds during as-built and maintenance inspections. The lead inspector indicated that if depth has visibly diminished she will note it as a maintenance need; however, there was no standard procedure in place to check the depth during every inspection.

Site: Grafton Ridge

Photographs 16 through 19 in Attachment 5 were taken at this privately owned site, which consists of a stormwater management facility for control and treatment of runoff from a new residential development in Harford County. The facility consists of a dry extended detention pond with vegetated pretreatment

forebay and a sand filter (Photograph 16). This was the County's first visit to this site for an as-built inspection. Due to an emergency the County's lead inspector could not accompany the EPA Inspection Team to this last site; however, the lead design reviewer was available and accompanied the team on the final site visit.

Due to improperly timed construction phasing and lack of hillside stabilization, forebay and sand filter portions of the stormwater management facility appeared to be silted in with sediment that had runoff nearby hillsides and construction sites (Photographs 17-19). The Harford County design reviewer commented that these facilities appeared to be silted in to a point beyond repair and would likely have to be re-constructed. In the meantime runoff from this development is not receiving the intended water quality treatment since both the vegetated forebay and the sand filter are clogged, preventing flow from passing through their soil and sand, respectively.

In the approved as-built plans, the Maintenance Schedule (Sheet 6) outlined operations and maintenance requirements. Item 7 states that the forebay and sand filter are to be cleaned when sediment reaches one foot depth. The drawings show a marker that would be used to measure this depth, however no markers were observed in the constructed forebay and sand filter. It was clear that no maintenance had been performed on these facilities and as a result their functionality had been compromised.

Observation 3. Harford County does not require sufficient sequencing notes on design drawings

The inspection team observed that the construction sequencing notes on design drawings did not provide sufficient information for the County to ensure that construction is phased in such a way that post-construction stormwater management facilities are not damaged during the construction process.

The County indicated that this facility was dual purpose: portions of the facility were used for active-construction stormwater management, and then it was to be transitioned into a permanent post-construction facility, per the approved as-built drawings. It was clear that the facility was transitioned from active-construction BMP to post-construction BMP too early, compromising the post-construction BMP's functionality.

Observation 4. Harford County does not evaluate the transition between active-construction BMPs and post-construction BMPs

Harford County does not examine the gap between construction and post construction BMP use to ensure that construction in the drainage area for any active-construction BMP is 100 percent complete, before the BMP is removed or transitioned to its post-construction purpose. The inspection team noted that it appeared that the transition from construction BMPs to post construction BMPs at Grafton Ridge was not successful, resulting in improperly managed runoff from (still) active-construction areas, and damage to post construction stormwater controls.

B. Requirement III.E.3 – Illicit Discharge Detection and Elimination

The County's Illicit Discharge Detection and Elimination (IDDE) program is implemented by several County departments and a county contractor. The County has contracted with EA Engineering, Science, and Technology Inc. (hereafter, EA) to conduct field screening of outfalls, conduct annual surveys of commercial and industrial watersheds (i.e., hotspot investigations), and prepare a written report documenting the results of their activities for reporting to the County and MDE. The County's Water Resources Department is responsible for follow-up activities relating to outfall screening and annual surveys, and response to reports of illicit discharges including illegal dumping. The County's fire department is responsible for spill response activities.

Harford County Code, Article IV (Water Quality), Sections 109-25 through 109-30, appear to provide the County with adequate legal authority control illicit discharges, illegal dumping, and spills and to enforce the County's stormwater management policies.

The EPA inspection team accompanied County and EA personnel to one dry weather field screening location identified as having past indicators of an illicit discharge, three industrial/commercial facilities with indicators of the potential for illicit discharges, and one industrial/commercial facility that the County had previously identified as having illicit discharges or illegal activities or storage during the 2007 field-screening and routine commercial/industrial survey activities. These site visits included a physical review of the sites, a review of the field-screening procedures (conducted by EA), and a review of the documentation completed during the screening and survey process. The following sections describe observations made during the site visits.

Site: Outfall No. OF002335 – Pulaski Highway at Pine Road, Joppa MD – Dry Weather Field Screening Location

Photographs 20 through 22 in Attachment 5 were taken at Outfall Number (No.) OF002335 which discharges stormwater to a roadside ditch and is located near the intersection of Pulaski Highway and Pine Road. On September 4, 2007, while performing field screening, EA identified a light flow of water at Outfall No. OF002335. According to EA representatives, field testing was conducted and the flow was determined not to be an illicit discharge as the test results from two separate outfall visits indicated that the flow was most likely groundwater.

The EPA inspection team visited the outfall and noted site conditions similar to those found during the previous two visits by EA and the County (e.g., light flow and needed maintenance). County representatives stated during the site visit that they thought that the roadside ditch was a State Highway Administration outfall and not actually a County outfall. The County provided verification of the statement after the inspection.

Site: Bud's Car Wash – 1108 S Mountain Rd, Joppa – Potential Illicit Discharge Location

Photographs 29 through 38 in Attachment 5 were taken at Bud's Car Wash, a self serve car wash located near the intersection of S. Mountain Road and Route 40 (Photograph 23). The Car has two automated and four manual drive-thru covered wash bays and one manual uncovered wash bay. During travel from the County's office to Outfall No. OF002335 on May 20, 2009, the EPA inspection team noted a discharge of wash water from the facility to a storm drain on S. Mountain Road. The EPA inspection team continued to the outfall to observe dry weather screening procedures and returned to the facility upon completion of the activities at the outfall.

When the EPA inspection team arrived at the site, the discharge had ceased and the evidence of the discharge had diminished due to the sunny dry weather conditions; however the EPA inspection team conducted a thorough site review and noted several physical issues at the site. Specifically, the EPA inspection team noted that the grading of the wash bays was fairly flat resulting in a lack of containment of wash water, allowing wash water to flow out of at least one of the bays toward the facility's entrance (Photographs 24 through 26) and subsequently into the storm drain along S. Mountain Road. Other physical issues noted at the site included the placement of a "port-o-pot" on a constructed wooden platform suspended over what appeared to be a County drainage ditch (Photograph 27) and trash and debris evident in the drainage ditch (Photograph 28).

County representatives stated that the facility had not been reviewed during industrial/commercial survey activities nor had they received any illicit discharge complaints from County personnel or the general public.

Site: Days Truck Center – 1018 Pulaski Highway, Joppa, MD – Potential Illicit Discharge Location

Photographs 29 through 31 in Attachment 5 were taken at Days Truck Center is a used truck sales lot located adjacent to Bud's Car Wash at the corner of S. Mountain Road and Pulaski Highway. The EPA inspection team conducted a brief visit to the facility to observe a storm drain located in the northeastern corner of the facility. The storm drain was identified during a review of the drainage patterns from Bud's car wash. It appeared that the drain received runoff from the lot only. The EPA inspection team noted that drain was clogged with sediment, and standing water in the drain had an oily sheen (Photographs 29 through 31).

Site: 1008 Pulaski Highway, Joppa, MD – Potential Illicit Discharge Location

The EPA inspection team conducted a site visit to an auto detailing and used tire sales facility located at 1008 Pulaski Highway (Photograph 32). Photographs from this site are included as Photographs 32 through 37 in Attachment 5. A Google search on the address provided a facility name of Supreme Auto Works as a facility name was not posted at the site or obtained during the site visit. The facility is located approximately 150 to 200 yards west of Days Truck Center along Pulaski Highway. Stormwater from the facility appears to drain towards Pulaski Highway and into storm drains along the side of the highway.

The EPA inspection team noted several physical issues at the site. Specifically, the EPA inspection team noted pressure washing activities occurring outdoors on an impervious asphalt surface resulting in staining of the surrounding pavement (Photographs 33 and 34). The EPA inspection team also noted a bucket of used oil stored outdoors with only a small concrete slab resembling a yard paver covering a portion of the top of the bucket (Photographs 35 and 36). The EPA inspection team also noted that the grate on a roadside storm drain located on the property had been removed and placed in the storm drain along with trash and debris (Photograph 37).

Site: Ace Appliance – 514 Pulaski Highway, Joppa, MD – Commercial and Industrial Survey Facility

Photographs 38 through 50 in Attachment 5 were taken at Ace Appliance (Photograph 38), which the County identified as an appliance repair and retail facility. Further investigation including conversations with a facility representative indicated the front of the building facing Pulaski Highway was Ace Appliance and that carnival equipment construction and repair activities were occurring behind Ace Appliance, but on the same property. The facility had been identified as a potential hotspot during commercial and industrial survey activities in 2008. County representatives stated and provided documentation that facility representatives had been unresponsive during several attempts to contact the facility.

The EPA inspection team conducted a site visit and noted that the facility appeared to be a significant threat to water quality due to activities associated with construction and repair of carnival equipment and the close proximity to a natural drainage way. Specifically, the EPA inspection team noted storage of numerous petroleum containers with varying amount of product exposed to stormwater (several without lids or other means to prevent contact with stormwater), numerous other hazardous liquid storage containers (i.e., paints and solvents) with varying amounts of product exposed to stormwater, and fluorescent light bulbs stored in an unsafe manner near a natural drainage area (Photograph 39 through 45). Other observations noted include petroleum stains throughout the facility (Photographs 46 and 47), a lack of BMPs to prevent overspray from spray painting activities resulting in paint stains throughout the facility, and possible sand blasting media stored on the ground without BMPs to prevent runoff (Photographs 48 through 50).

Site: 1009 Pulaski Highway, Joppa, MD – Potential Illicit Discharge Location

The EPA inspection team conducted a brief site visit to what appeared to be two separate businesses co-located at 1009 Pulaski Highway. The two businesses are “R.G. Washington Used Cars” and “Steves Auto” (Photographs 51 through 53).

The EPA inspection noted that the activities on the property appeared to be a significant threat to water quality due to number and severity of physical issues and close proximity to a natural drainage way. Specifically, the EPA inspection team noted automobile repair activities occurring outdoors; used oil storage containers ranging in size from an approximately 100-gallon tank to numerous 5-gallon containers stored outside without protection from stormwater; metal trash and debris piles; used automobile engines, mufflers, batteries and other automobile parts stored throughout the facility; and an overturned automobile all resulting in petroleum stains throughout the property (Photographs 54 through 65).

Observation 5. Harford County’s program does not fully address illicit discharges, illegal dumping and spills

County personnel stated that reports of illicit discharges, illegal dumping and spills may be received by several County departments as the County does not maintain a central number and/or website for citizen or County personnel to report such activities. Further, County personnel stated that formal or informal procedures had not been developed to direct County personnel to the proper County department or State agency for notification of an illicit discharge, illegal dumping, or spill. Also, County personnel indicated that it was not clear what information needed to be provided during the initial notification. Based on conversations with County personnel, a report of an illicit discharge, illegal dumping or a spill could and have been routed to several different County departments and State agencies for follow-up. County representatives further stated that they are only aware of one public report of an illicit discharge in the last five years which indicates that the reports are either not reported to the appropriate department or that public education and outreach is insufficient.

The County did not provide any information regarding illegal dumping and did not provide a complete log of spills. County representatives stated that the spills occurring on roadways are typically handled by the County fire department and that the State Office of Emergency Management is contacted in the event of large-scale spills. According to County representatives, the fire department provides the Water Resources Department with a log of roadway spills (Exhibit 9), but does not provide information regarding the nature of the spill including, if the spill entered the MS4 and if so, the volume of product that entered the MS4, the volume of product recovered from the MS4, or details regarding the clean up or removal of the product from the MS4.

The County did not have County-wide procedures to ensure that reports of illicit discharges, illegal dumping and spills that result in a discharge to the County’s MS4 are routed to the appropriate County department or state agency, are adequately documented and that the initial response and subsequent follow-up (i.e., enforcement action if applicable) is tracked.

Observation 6. Harford County did not develop a standard operating procedure for documenting, reporting, tracking, and conducting adequate follow-up of potential illicit discharges or other pollutant sources

The County has not developed a standard operating procedure (SOP) for documenting, reporting, tracking and conducting adequate follow-up of potential illicit discharges or other pollutant sources resulting in the failure to eliminate at least one illicit discharge at Ace Appliance.

The County utilizes EA to conduct commercial and industrial surveys to identify potential illicit discharges from businesses within the county. EA identified Ace Appliance as a potential hotspot location during hotspot site investigations on February 6, 2008. The County failed to complete an adequate response in a timely manner to the Ace Appliance Facility identified as a potential threat to stormwater quality during the industrial/commercial surveys. At the time of the EPA inspection, the issues had been unresolved for a period of greater than 15 months since date of discovery. According to documentation provided, the facility was first identified as a potential hotspot by EA (Exhibit 10) on February 6, 2008. County personnel stated that EA did not notify them of the facility until the Draft summary report for 2007 was provided to the County in August 2008, approximately six months after the initial discovery. According to the County's "Business Inspections" tracking table (excerpt provided in Exhibit 11) the County did not initiate follow-up activities until October 9, 2008, approximately one to two months after original notification. As of the date of the EPA inspection, the County had not resolved the physical issues nor had the County initiated an enforcement action to cease the discharge resulting in the illicit discharge occurring for over 15 months.

Observation 7. Harford County did not focus on hotspots in commercial and industrial survey location selection

The County has not evaluated the current site selection method for commercial and industrial surveys or hotspot investigations. The EPA inspection team observed that there were few focused hotspot investigations and/or educational efforts in the several mile long Pulaski Highway industrial area within the County. The EPA inspection team identified and visited four facilities (previously identified) of concern within a very small geographic area (within the Pulaski Highway industrial area) in the matter of approximately two hours. During surveying activities, the County only investigated one facility (Ace Appliance) within the highly industrialized mile long stretch the EPA inspection team visited.

Observation 8. Harford County did not provide training or direction to county personnel and field staff for detecting and eliminating illicit discharges and improper disposal

County personnel who have a direct role in the Illicit Discharge Detection and Elimination Program have not received training or direction in how to identify and report conditions in the stormwater facilities that might indicate the presence of illicit discharges to the MS4. During the course of the inspection activities, County staff displayed a general lack of awareness regarding their role in preventing pollution and detecting and eliminating illicit discharges. Specifically, during illicit discharge site visits with County representatives, an illicit discharge was noted by the EPA inspection team that was not noted by the County representatives. The County representatives had not received training or specific direction to identify illicit discharges outside of their primary hotspot and dry weather field screening follow-up responsibilities.

C. Requirement III.E.4 – County Property Management

The County's Property Management program element, as specified by the permit, is managed by the County's Water Resources Department. The Water Resource Department is responsible for tracking and reporting activities as required by the permit. The individual County departments responsible for the different types of facilities are responsible for applying for permit coverage and maintaining compliance with the individual and general NPDES permits for their respective facilities. The County reported in their 2007 Annual Report that they had identified 23 facilities that require NPDES permits and/or pollution prevention plans. The County further determined that 12 of the 23 facilities do not require pollution prevention plans due to several reasons (e.g., swimming pool discharges). The EPA inspection team identified several inconsistencies between the County's tracking and documentation of County properties and actual operations of the facilities. Specifically, the EPA inspection team identified three facilities that had not obtained permit coverage under MDE's General Discharge Permit No. 02-SW and

at least two that had not developed the required SWPPPs. A summary of the facilities is provided in Exhibit 12 including permit status, SWPPP status, and comments regarding permit and SWPPP observations. A complete list of Harford County Industrial Permit Holders obtained from MDE is provided as Exhibit 13.

The EPA inspection team accompanied County personnel to two of the County's four Highway maintenance facilities. The site visits included a physical review of the site, review of material-handling practices, and review of the facility-specific stormwater pollution prevention plan (SWPPP) and associated documentation. The following sections include the observations that the EPA inspection team made during the site visits.

Site: Highway Maintenance – Hickory II Complex at 1807 N. Fountain Green Road, Bel Air, MD

The Hickory II Complex (complex) covers approximately 22.17 acres and serves as a maintenance, fueling, and materials storage facility. Staff at the complex are responsible for the maintenance and cleaning of roads, alleys, bridges, viaducts, underpasses, drains, and culverts. All vehicle maintenance at the complex is conducted by the County's contractor, First Vehicle, who acts as a tenant at the complex. Materials storage consists of materials such as fuel, salt and deicing fluid, sand, traffic paint, and herbicides. The complex has two administrative/ maintenance buildings, two salt domes, a stockpile area, a fueling station, a leachate tank with delivery area (Photograph 66), two truck/equipment sheds, an oil/water separator, and a water quality marsh. There was on-going construction at the site during the inspection. Construction activities appear were verified to be less than 1 acre as stated in the construction grading permit (Photographs 67 through 69)

A review of permit coverage indicated that stormwater discharges associated with industrial discharges had been obtained under Permit No. 02-SW-1714 and has prepared the required SWPPP for their activities.

According to the complex's industrial SWPPP (Attachment 6), the general vicinity slopes in a southeasterly direction. Stormwater runoff from the salt domes, the parking area, main office truck shed, equipment shed (Photographs 70 and 71) the First Vehicle maintenance area (Photographs 72 through 75) and fuel tank area (Photograph 80), and which flows to an on-site stormwater detention pond (Photographs 81 and 82) and discharges into an unnamed tributary of Thomas Run, a tributary to Deer Creek. The SWPPP further states that runoff which may occur from the Stockpile millings, stone and topsoil area drains to the State Highway Administration pond located along the Hickory Bypass.

The complex's SWPPP was originally prepared in December 2004 and was most recently revised in August 2008. The EPA Inspection Team noted that the SWPPP did not meet the requirements of Discharge Permit No. 02-SW. The SWPPP did not include complex-specific BMP locations, stormwater management pond inspection and maintenance requirements, locations of outfalls, and directions of stormwater flow on the site map. In addition, the plan provided did not contain applicable or adequate documentation of past inspections, employee training, or monitoring. Documentation was provided for a May 15, 2009 inspection (less than one week prior to the EPA inspection) that indicated that no issues of concern were identified.

The SWPPP did not appear entirely accurate as the stockpile millings, stone and topsoil area (Photographs 92 through 96) did not appear to drain to a State Highway Administration pond. Upon review of the information provided in the SWPPP (e.g., Figure 2 - Site Map and Figure 3 – Drainage Map in Attachment 6), it did not appear that a stormwater pond existed in the location specified on the western portion of the site. A review of the area does indicate that a pond does exist along Hickory Bypass, but the pond is located to the north of the facility not on the west. Further, no BMPs have been implemented in the area to prevent stormwater coming into contact with the activities in that area and therefore

preventing discharge of polluted stormwater from entering the State Highway Administration's MS4 (MDE MS4 Permit No. MD0068276).

The EPA inspection team noted the following:

- Storage of containers (i.e., drums and dumpster in First Vehicle maintenance area) in an area that did not appear to drain to the complex's stormwater pond (Photographs 70 and 71);
- Petroleum leaks resulting in staining from equipment and storage containers (Photograph 75 through 77);
- Vehicle storage over a storm drain (Photograph 78) without any BMPs in place;
- No review of transfer procedures for the leachate tank;
- Lack of knowledge or procedures for the operation and maintenance of the oil/water separator (Photograph 79);
- Lack of procedures for the operation of the fueling station;
- Lack of procedures for draining stormwater from the fuel tank secondary containment area (Photograph 80);
- Two washing areas with no apparent BMPs (Photographs 83 through 86);
- No secondary containment for two 3,000 gallon deicing fluid tanks (Photographs 87 and 88);
- No BMP to protect a storm drain receiving stormwater from an aggregate stockpile (Photograph 89 through 91) resulting in significant sediment and possible salt in the drain; and
- No BMPs to minimize runoff from roadway paint storage and mixing activities, including good housekeeping procedures, resulting in significant staining throughout the area and in the drainage ditch (Photographs 97 through 101).

At the time of the EPA Inspection, construction of a new fueling station was occurring in the west portion of the complex near the complex entrance on North Fountain Green Road. According to the paperwork posted at the complex the disturbed area of the project was approximately 36,000 square feet. It appeared that the applicable local permits (e.g., local grading permit) had been obtained for the construction activities and were posted at the site as required. It did not appear that an NPDES construction general permit issued through MDE was required as the disturbed area was less than one acre. The EPA inspection team noted a "port-o-pot" that appeared slightly tilted (Photograph 68), which could result in a release of chemicals and waste.

In addition, it appeared that there was a lack of overall complex oversight as several County departments and a contractor utilized different portions of the complex. For example, the complex contained a leachate tank utilized by the County's solid waste department. Complex representatives stated that they had not reviewed the operation or maintenance of the tank as it was the responsibility of the Solid Waste Department. The complex's SWPPP did not contain any BMPs for the operation of the loading/unloading or any inspection or maintenance requirements for the tank. The County complex representatives did not provide any direct oversight of First Vehicle. County representatives were not aware if First Vehicle had prepared or implemented a SWPPP, did not conduct periodic inspections of the tenant's area or activities to ensure proper BMPs were implemented and maintained, and did not determine if SWPPP training had been conducted or was adequate.

Site: Highway Maintenance – Jarrettsville Complex 1348 Cooptown Road, Forest Hill, MD

The Jarrettsville Highway Maintenance Complex (complex) covers approximately 14 acres and serves as a maintenance, fueling, and materials storage facility. The complex has one building with administrative

offices, a wash bay and several maintenance bays; one storage shed; two sand/salt storage sheds; a fueling station with 4,500 gallons of capacity of gasoline in an above ground storage tank (Photograph 102); a stockpile area for spoils; drainage ways; and a stormwater pond.

A review of permit coverage indicated that discharges associated with vehicle wash waters and stormwater are authorized by State Discharge Permit No. 00-DP-3272 (MD0068071).

According to the complex's industrial SWPPP, runoff from the complex flows through a series of dikes or swales before entering the extended detention stormwater management facility. Runoff from the areas surrounding the stockpiles flows through an earthen dike to a stone outlet, and onto the stormwater management facility. The fuel tanks located in this area are equipped with an oil/water separator to help contain any spills should they occur. From the stormwater management facility, all runoff flows into an unnamed tributary of Deer Creek.

The complex's SWPPP was originally prepared in December 2004 and was most recently revised in January 2009. The EPA Inspection Team noted that the SWPPP did not meet the requirements of Discharge Permit No. 02-SW. The SWPPP did not include complex specific information regarding monitoring (i.e., frequencies, parameters, and results) required by Discharge Permit No. 00-DP-3272; BMP locations; stormwater management pond inspection and maintenance requirements; maintenance requirements and documentation (e.g., log book) of waste treatment systems (e.g., oil/water separator) as specified by Discharge Permit No. 00-DP-3272; locations of outfalls; and directions of stormwater flow on the site map. In addition, the plan provided did not contain applicable or adequate documentation of past inspections, employee training, or monitoring.

The SWPPP did not appear entirely accurate as the SWPPP indicated that the complex had "an extended detention stormwater management facility", a bituminous swale to treat salt dome flows, and an oil/water separator near the fuel tanks (Introduction - Page 1). The stormwater management design documents provided indicated that the pond was designed to detain water to the 2 Year/10 Year standard for the reduction of stormwater quantity discharge; the design document did not describe the water quality features mentioned in the introduction to the SWPPP (bituminous swale and oil/water separator). In addition, the EPA inspection team was not able to locate a bituminous swale for the salt dome drainage area or an oil/water separator near the fueling area.

The EPA inspection team noted the following while at the complex:

- Staining on the paved area outside the administrative office entrance and maintenance bay door and from the storage tank area towards wash bay (Photograph 102);
- Lack of procedures for the operation of the fueling station;
- Lack of knowledge or procedures for the operation and maintenance of the oil/water separator for the wash bay;
- Storage of containers outside without a secondary containment skid as per the SWPPP (i.e., drums of transfer oil, hydraulic fluid, antifreeze, motor oil, and gasoline) (Photograph 103);
- Washing activities outside the wash rack resulting in sufficient flow to reach an on-site storm drain and sediment buildup around the drain (Photographs 104 and 105);
- An oily residue next to the spoils pile (Photographs 106 through 108); and
- Stressed vegetation that appeared to be the result of runoff from salt piles (Photographs 109 and 110).

Observation 9. Harford County did not track and obtain NPDES industrial stormwater permit coverage

Part III.E.4 of the permit requires the County to identify all County-owned and municipal facilities requiring NPDES stormwater general permit coverage to submit Notices of Intent (NOIs) to MDE for each facility. The County did not obtain permit coverage under MDE's Discharge Permit No. 02-SW for the Board of Education Headquarters facility. The County had identified the facility as requiring permit coverage and subsequently submitted an NOI, but at the time of the inspection had not obtained coverage under MDE's Discharge Permit No. 02-SW.

Observation 10. Harford County did not develop and implement pollution prevention plans

Part III.E.4 of the permit requires the County to track the status of pollution prevention plan development and implementation and to report the information to MDE annually. At the time of the EPA inspection, the County had not prepared and implemented SWPPPs for at least two facilities, the Board of Education Headquarters and the Parks and Recreation Maintenance Facility. County representatives stated that the SWPPP for the Board of Education Headquarters was expected to be developed by "the end of the summer in 2009" and that no projected completion date for the Parks and Recreation facility was available.

Also the SWPPPs for the Highway Department Hickory II and Jarrettsville maintenance Complexes lacked required components. In general the plans for the two Highway Facilities were inaccurate and did not contain all information required by Discharge Permit No. 2 (Hickory II Complex) and Discharge Permit No. 00-DP-3272 (Jarrettsville). Specifically the SWPPPs did not contain specific BMP locations; stormwater management pond inspection and maintenance requirements; locations of outfalls; directions of stormwater flow on the site map; and applicable documentation and required records.

Cursory SWPPP reviews were completed for other County facilities not visited. General SWPPP observations included lack of documentation, including required inspections and staff training, minimal facility specific BMPs, and the lack of certification signatures.

The inspection team observed environmental impacts from stormwater pollution at both of the Highway Department maintenance facilities visited (e.g., dead vegetation resulting from salt runoff – Photograph 109).

Observation 11. Need for oversight of County property requiring NPDES permit coverage

At the time of the EPA inspection, the duty to obtain permit coverage under Discharge Permit No. 02-SW and maintain compliance with that permit was delegated to the county agency or department responsible for the individual facilities. For example, the Board of Education Headquarters facility is managed by the Board of Education, the Parks and Recreation facility is managed by Parks and Recreation, and the wastewater treatment plants are managed by the Department of Public Works. Based upon conversations with County personnel, the observations regarding coverage under Discharge Permit 02-SW, the adequacy of SWPPPs, and the implementation of SWPPPs, it appeared that there was a lack of training and understanding by County staff from each of the agencies or departments regarding the requirements of MDE's industrial stormwater permit.

D. Requirement III.E.6 – Public Education

1. Publicized Compliance Hotline

Part III.E.6.a of the Permit requires the County to “publicize a compliance hotline for the public reporting of suspected illicit discharges, illegal dumping, and spills.” Emergency numbers for septic issues, sewer overflows, and illegal dumping are staffed 24 hours a day and posted through the Water and Sewer Department, Health Department, and Emergency Operations Hazmat Team. Harford County’s DPW website includes water and sewer emergency numbers at <http://www.harfordcountymd.gov/dpw/ws/phone.html>. Emergency numbers are also posted through the Sherriff’s Office Environmental Crimes Unit for illegal waste dumping, violations, and enforcement.

An internet feedback site is available at <http://www.harfordcountymd.gov/feedback.cfm> which allows residents to enter comments, inquiries, suggestions and complaints. The County indicated that complaints are noted based on phone calls received from the community as well as reports called in from County inspectors regarding environmental concerns observed in the field.

Written compliance tracking is maintained by the County for the complaints and compliance issues associated with hazardous materials and sewer overflows into streams; however, sediment and erosion control calls are not tracked by the County. Sediment and erosion control complaints are forwarded to the sediment and erosion control field inspectors who investigate the issues; no follow up is conducted by the County.

The 2007 Annual Report did not make note of any calls or complaints being received through the compliance hotlines.

2. Water Quality Education and Outreach

The County conducts a variety of education and outreach programs with the community through publications, events, school activities, workshops, and meetings. In 2007, Harford County Water Resources Engineering staff participated in the following outreach activities:

- An Earth Day Festival, the Upper Western Shore Wade-In, and the Harford County Farm Fair;
- The North Bend Elementary School’s Earth Day celebration;
- An aquatic insect demonstration for first graders at North Harford Elementary School;
- The annual Deer Creek Days for seventh graders at North Harford Middle School;
- The Summer Center for Action Investigation at Harford Glen Environmental Education Center;
- The Science and Mathematics Academy at Aberdeen High School;
- The Harford County Envirothon Training;
- Stormwater management workshops for homeowners association and property management companies;
- Capital project community meetings;
- The development, review, and dissemination of the Storm Drain and Turtle Games DVD;
- The “Enhancing the Water Resources” website which incorporates informative links which focus on watersheds, water quality, and watershed restoration;
- The WRAS Stakeholder Workgroup which developed a strategy to restore and protect the Deer Creek Watershed;
- The second annual BioBlitz at the Anita C. Leight Estuary Center which increased the public’s understanding of the variety of wildlife at the park;

- The development of the Youth Environmental Summit for County high school students;
- The installation of stream name signs along Deer Creek, Swan Creek, and Bynum Run;
- The production of publications such as EnviroNews and “Your Building Permit & The Chesapeake Bay”; and
- Serving as the coordinator for the Environmentality group.

Part III.E.6.b of the permit requires that the County provide information regarding water quality issues to the general public. Brochures and pamphlets were provided to the public which address: water conservation, recycling, hazardous waste disposal, and watershed protection. Table 4 contains a list of the water quality information that must be available to the general public and the associated documents that Harford County furnished during the inspection which address these topics (these documents are included in Exhibit 14).

Table 4. Summary of Water Quality Outreach Materials Provided by Harford County

Water Quality Issues listed in Permit Section III.E.6.b	Outreach Materials Furnished by Harford County During the Inspection
i. Water conservation	“Water Conservation – Save water with efficient systems and healthy plants” (Exhibit 14A) Bookmark: “Every Drop Counts” (Exhibit 14B)
ii. Stormwater management facility maintenance	Stormwater Management Maintenance Workshops (Exhibit (14C)
iii. Erosion and sediment control	“Your Building Permit and the Chesapeake Bay” (Exhibit 14D)
iv. Household hazardous waste	“Oil and Antifreeze Recycling” (Exhibit 14E)
v. Lawn care and landscape management	Conservation Landscaping – a homeowner’s guide” (Exhibit 14F) “Maryland Conservation Gardening” (Exhibit 14G) “Grasscycling Guide” (Exhibit 14H) “Nutrient Management – Apply only the nutrients plants can use.” (Exhibit 14I) “Mulching – Mulching enriches and protects soil, helping provide a better growing environment.” (Exhibit 14J) “Clean Waters – Starting in Your Home and Yard” (Exhibit 14K) “Streamside Neighbors – Fertilizers & Pesticides & Natural Pest Control” (Exhibit 14L) “Pest Management – Early detection and treatment of pests means a healthier growing environment.” (Exhibit 14M)
vi. Litter control, recycling and composting	“Composting – Composting turns household wastes into valuable fertilizer and soil organic matter.” (Exhibit 14N)
vii. Car care, mass transit and alternative transportation	None provided. ¹
viii. Private well and septic system management	None provided. ¹
ix. Pet waste management	“Fact Sheet: Pet Waste and Water Quality” (Exhibit 14O)

¹ The County indicated that outreach on this topics is managed by another department.

Observation 12. Harford County does not evaluate the effectiveness of its program in reaching the design community with outreach efforts

Stormwater Management Maintenance Workshops are provided by the County. The workshops cover stormwater management facility maintenance, inspections, and Maryland design manual requirements (the Agenda is provided as Exhibit 14 C). The County offers the workshops to the design community as well as homeowners associations and parties that would perform maintenance on private BMPs. Also, as described in Section III.A of this report, the lead design reviewer offers to meet with design engineers to discuss the County's review comments. Despite these efforts, the County indicated that the majority of BMP facilities do not pass the first round of as-built inspections. The lack of design and construction compliance indicates a possible gap between the County and the design community.

As outlined above, the County provided literature to address permit requirements III.E.6.b.i through III.E.6.b.vi, and III.E.6.b.ix; these pamphlets and brochures are included in Exhibit 14. No public education information was provided regarding (1) car care, mass transit and alternative transportation, or (2) private well and septic system management (permit requirements III.E.6.b.vii and III.E.6.b.viii, respectively). The County indicated that outreach on these topics is managed by other departments (Planning and Zoning and the Health Department, respectively).

Observation 13. Harford County does not provide outreach and education regarding illicit discharge detection and elimination

Part III.E.6.c of the permit requires that the County provide information regarding water quality issues to the regulated community. There is no evidence of such information being requested or provided. The County indicated that they would refer industrial entities (such as car washes) to MDE for information regarding water quality regulations.

E. Requirement III.H – Assessment of Controls

The County's Water Resources Department is responsible for conducting biological, physical, and chemical monitoring. Based on discussions with County personnel and a review of documentation provided, the County appeared to be implementing the Assessment of Controls program in accordance with the provisions of the Permit.

F. Requirement III.F and III.G – Watershed Assessment, Planning, and Restoration

Part III.F of the Permit requires the County to conduct a "systematic assessment of water quality within all of its watersheds. These assessments shall include detailed water quality analyses, the identification of water quality improvement opportunities, and the development of plans to control stormwater discharges to the maximum extent practicable." Part III.G of the Permit requires the County to "implement those practices identified in Part III.F above to control stormwater discharges to the maximum extent practicable." Furthermore, the Permit requires the County to restore or treat a total of 20 percent of the County's impervious area over the previous permit term (10 percent) and the current permit (an additional 10 percent) which amounts to 1,659 acres of the total county area of 8,297 acres.

During the inspection, Harford County explained the stream corridor assessment approach that they have used to systematically assess water quality within the County's watersheds. The County also explained the more detailed studies and projects that have been conducted within smaller drainage areas.

Observation 14. Harford County is not restoring or treating 20 percent of the County's impervious area

The County had not implemented restoration efforts in a watershed, or combination of watersheds, to restore twenty percent of the County's impervious surface area. County representatives reported in their 2007 Annual Report that they expected to have completed restoration or treatment of approximately 316 acres of the total 8,297 acres, representing approximately 3.8 percent, by the end of the County's second permit term. County personnel also stated that they have not assessed whether the County has identified enough projects to achieve the 20 percent impervious surface restoration.

IV. ADDITIONAL CONCERNS

The EPA inspection team made the following additional observations during the inspection.

A. Lack of Adequate Funding

According to Harford County's permit application (included as Appendix I of the Permit), the County reported that funding for its NPDES program will be obtained through General Funds and that current revenue sources are adequate to fund the many components of its stormwater management and NPDES programs.² However, during the inspection the County indicated that they do not have adequate funding to meet the requirements of their permit. Several County programs were found to be under-staffed and/or under-funded and are therefore unable to fully execute the MS4 program to meet the permit requirements.

For example, post-construction stormwater BMP preventative maintenance inspections are not being performed to the County's standard, at least partially due to the fact that the County relies on seasonal employees and less experienced staff. If additional resources are allocated to the program, Harford County could seek a second lead inspector with the skill set and experience of the current lead inspector (who executes all of the as-built inspections) to manage the triennial inspection program.

Also, as discussed above in Section III.F, the County has not met the previous or current permit goals to restore 10 percent (per permit period) of the County's impervious surface area (20 percent total). The County explained that adequate funding was not available to plan and execute all of the projects necessary to meet this goal.

B. Summary Recommendation Regarding Development and Implementation of the County's Stormwater Management Programs

MS4 programs, by necessity, involve numerous divisions and personnel within an organization. Therefore, successful implementation of a comprehensive MS4 program relies on strong interdepartmental coordination and cooperation by personnel. In recognition of this, the entire County, rather than a single department, is listed as a co-permittee in the Permit. It was apparent through the course of the EPA inspection that interdepartmental coordination and cooperation was insufficient or at times absent.

² Appendix I – Maryland Department of the Environment, National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Discharge Permit Application Summary, Harford County; Available at: http://www.mde.state.md.us/assets/document/sedimentStormwater/MSSPermit/ha_permit_appendix.pdf.